

DRAFT

Mn/DOT's Regional Transportation Management Center, Roseville, Minnesota – A Statewide TMC Operated by the Public Sector

12.1 Introduction

The Regional Transportation Management Center (RTMC), located adjacent to the Metropolitan District headquarters of the Minnesota Department of Transportation (Mn/DOT) in Roseville, Minnesota, opened for operation in the spring of 2003. The new center replaces an existing facility, built in the early 1970's, that was unable to meet the growth demands in the existing freeway management program, resulting in the inability to: (Regional Transportation Management Center, Implementation Plan, March 17, 2000):

- Effectively manage an expanded incident management program;
- Accommodate all equipment needs for a regional freeway management system; and
- Locate appropriate staff at existing TMC.

The new Minnesota Regional Transportation Center provides a successful example of how an existing TMC is expanded and 'rebuilt' to accommodate the ever increasing activities of a viable TMC. The new RTMC combines the original TMC's singular purpose – freeway operations – with roadway maintenance, traffic signal control for major arterials, and state police dispatch. In fact, the freeway operations role now takes up only slightly more than a quarter of the 23 workstations on the RTMC's control room floor; six workstations are dedicated to freeway operations, eight to police dispatch, six to maintenance, two to Mn/DOT Metro Division's traffic signal control, and one to traffic radio (Newsletter of the ITS Cooperative Deployment Network, Discussion with Nick Thompson, July 1, 2003).

The Regional Traffic Management Center replaced the original TMC built in the early 1970's. The RTMC, with a total size of 54,000 square feet, includes an 18,000 square foot operations center, 7,500 square foot computer and network center, and 12,000 square feet of office space for support staff.

12.1.1 General System Description

Collocated within the RTMC facility are the Mn/DOT Metro District Maintenance Dispatch, MnDOT's office of Traffic, Security, and Operations, and the Minnesota Department of Public Safety's State Patrol Dispatch, providing a coordinated approach to traffic and incident management for the Twin Cities' freeways and state arterials.

Though the vast majority of activities conducted at the RTMC pertain to freeways, the RTMC serves as a back-up center to other regional traffic management centers located in rural areas of the state. Statewide traveler information systems, including 511, are operated and maintained by RTMC staff. A local radio station broadcasts directly from the RTMC.

12.1.2 General Objectives of System

The objective of the Mn/DOT RTMC is to provide motorists with a faster and safer trip on metro-area freeways through utilization of Intelligent Transportation Systems, including real-time delivery of traveler information.

12.2 Design and Implementation

Traffic management efforts in Minnesota began in the 1970's. As systems were developed and deployed, Mn/DOT saw a need for a central control facility. In 1972, the original TMC was built to manage freeway operations in the Twin Cities area. In 2003, a new facility, the RTMC in Roseville, Minnesota, began operations.

The design process for the new RTMC began in 1997 with the development of a vision for regional traffic management. A design oversight team, consisting of representatives from the existing Metro TMC, Maintenance, and State Patrol, were asked to document existing operations and projections for future growth. Based upon the concepts and vision that the project team developed for a shared operation, a set of design criteria were developed, including criteria for training rooms, tour accommodations, computer equipment room, and a layout that would facilitate information sharing while keeping noise and disruption to a minimum.

Geographic Area Covered

The Regional Traffic Management Center is responsible for freeway operations within the Mn/DOT's Metropolitan district. The District includes seven counties in the Twin Cities area; the two largest cities in the state, Minneapolis and St. Paul; and numerous cities and townships with a combined population of more than 2.8 million people.

Participating Agencies and Stakeholders

Multiple agencies and disciplines cooperatively work toward improved metropolitan area freeway operations. These include:

- Minnesota State Patrol Dispatch;
- Mn/DOT Maintenance Dispatch; and
- Mn/DOT Traffic Operations.

During the design and planning phases of the RTMC, Mn/DOT staff invited numerous cities and counties to participate in the RTMC. However, they all decided, for a variety of reasons, not to participate. While cities, counties, and Mn/DOT mutually agree that they must work together towards improved transportation operations, they also routinely work with other city and county departments, and need to be located near them. A similar invitation was also issued to the Transit Department, and Mn/DOT does provide video images to the local transit agency.

Mn/DOT and its partners established key concepts and a vision for how the TMC needed to function, operate and grow to meet the demands of regional and statewide traffic management. Criteria were developed ranging from how systems needed to operate, down to TMC layout for optimum functional capacity.

TMC Functions

- Freeway Traffic Management
 - Ramp metering
 - CCTV surveillance
 - Dynamic Message Signs
- Maintenance Dispatch for freeways and state maintained arterials (Mn/DOT facilities)
- Incident Management
- Traveler Information
 - Delivering timely and accurate information during peak hours and during major incidents via radio, television, and the internet.
 - The traffic radio station broadcasts directly from the RTMC. Traffic reports are provided every 10 minutes during morning and afternoon peak periods. During incidents, reports are broadcast continuously.
- FIRST (Freeway Incident Response Safety Team) Program. The FIRST program includes several bright-green pick up trucks equipped with the tools necessary to help stranded motorists and to provide traffic control during an incident. FIRST vehicles currently patrol 8 routes covering 160 miles of centerline roadway between the hours of 5:30 a.m. and 7:30 p.m. Monday through Friday. Some limited coverage is provided on the weekends.

Number and Type of Field Elements

- CCTV Cameras – 285
- Loop Detectors – 4,000
- Ramp Meters – 419 ramp meters, of which 213 meters have the potential to operate during the morning peak and 266 meters have the potential to operate in the evening peak
- Dynamic Message Signs – 70
- Lane Control Signals – 23 mounted outside of the Lowry Hill Tunnel in downtown Minneapolis
- FIRST (Freeway Incident Response Safety Team) Program, including 6 to 8 freeway patrols patrolling freeways on 8 routes, covering 160 miles of metro area freeways

12.3 Implications for Business Plan

Procurement

Implementation of the RTMC utilized several different types of procurement methods and techniques, dependent upon the items or services being procured. Specialized services such as implementation of a video display system was procured utilizing a system manager approach; while furniture for the TMC was purchased under an existing state requisition contract. The procurement techniques utilized include:

- Sole-source;
- Engineer/Contractor;
- Systems Manager;
- State Contract;
- State Requisition; and
- Consultant Agreement.

Staffing

To fully staff the RTMC, system operators are 'shifted-in' from other departments within the Metropolitan District. In addition to being able to fully staff the TMC, the 'shifting-in' of agency staff from other departments facilitates increased awareness and understanding of TMC operations among those with other responsibilities, resulting in improved coordination and collaboration throughout the district.

As with many other TMCs, recruiting, hiring, and training qualified staff is a challenge. Furthermore, agencies often encounter difficulties receiving approval for additional personnel to staff the RTMC. The Mn/DOT has in part addressed staffing of the RTMC by utilizing a 'rotating of staff' approach. Freeway system operators are 'shifted-in' from other departments within the Metropolitan District. Staff who desire the opportunity to work in the RTMC commit to a 1-year term during which they generally work 1 or more 2 to 4 hour shifts per week. In addition to being able to fully staff the TMC, the 'shifting-in' of agency staff from other departments facilitates increased awareness and understanding of TMC operations among those with other responsibilities, resulting in improved coordination and collaboration throughout the district. University personnel, taking advantage of the data collection and research opportunities, have also volunteered as shift operators.